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SEMICONDUCTOR DEVICE

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[There are no amendments to this patent.]

Abstract

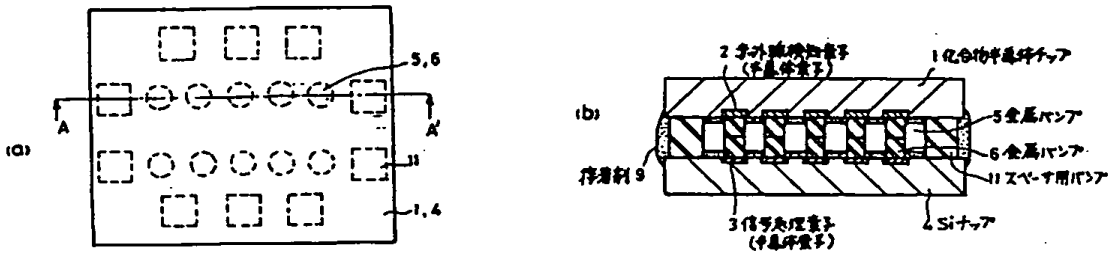
Purpose

The present invention pertains to a hybrid type semiconductor device. The purpose of the present invention is to provide a device such that there is no deviation in position for coupling electrodes made of metal bumps during the temperature cycle of the device.

Constitution

The hybrid type semiconductor device has semiconductor elements (2) and (3), which are formed on semiconductor chips

(1) and (4) that have different thermal expansion coefficients, and which are interconnected through coupling electrodes; in this hybrid type semiconductor device, bumps (11) used as spacers are arranged on the peripheral portion of any of said two semiconductor chips (1) and (4), and at the same time, adhesive (9) is coated on the outer side of said bumps (11) used as spacers to fix them between said two semiconductors chips (1) and (4).



Plane view and cross-sectional view of the first application example of this invention

Key: 1 Compund semiconductor chip
2 IR detecting element (semiconductor element)
3 Signal processing element (semiconductor element)
4 Si chip
5 Metal bump
6 Metal bump
9 Adhesive
11 Bump used as spacer

Claims

1. A hybrid type semiconductor device characterized by the following facts: in the hybrid type semiconductor device, semiconductor elements (2) and (3), formed on semiconductor chips (1) and (4) having different thermal expansion coefficients are connected to each other through coupling electrodes; in this hybrid type semiconductor device, bumpers (11) used as spacers are arranged at prescribed sides of the peripheral portion of said semiconductor chips (1) and (4) for the aforementioned respective, coupling electrodes, and at the same time, adhesive (9) is coated near said bumpers (11) used as spacers; said two semiconductor chips (1) and (4) are interconnected.

2. The hybrid type semiconductor device described in Claim 1, characterized by the following facts: when said two semiconductor chips (1) and (4) are connected together, said bumpers (11) used as spacers are set lower than the height of the coupling electrodes; the bumpers are connected only on one semiconductor chip surface, while they are set with a prescribed gap from the other semiconductor chip surface.

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